

ABSTRACT OF THE DISCLOSURE

Fused silica created by pyrolysis of SiCl_4 are introduced in a powder state into a vacuum chamber. Pluralities of jet streams of fused silica are directed towards a plurality of heated substrates. The particles attach on the substrates and form shaped bodies of fused silica called preforms. For uniformity the substrates are rotated. Dopant is be added in order to alter the index of refraction of the fused silica. Prepared soot preforms are vitrified in situ. The material is processed into quartz tubes for fiber optics and other applications, quartz rods for fused silica wafers for semiconductors and various optical applications and quartz plates for wafer processing and optical windows.

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